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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NEGRON, DANIEL L

ART UNIT PAPER NUMBER

2627

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/653,202

Applicant(s)

CHO, JAE-DEOG

Examiner

Daniell L. Negrón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-16,18-20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-16,18-20 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Request for Continued Examination

1. Examiner acknowledges the request for continued examination (RCE) filed on February 1, 2006.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 5, 9-12, 16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jen et al U.S. Patent No. 6,405,277.

Regarding claims 10 and 12, Jen et al disclose an apparatus for controlling a disk drive (34) comprising a buffer (74) separate from the disc in the disc drive (see Fig. 4) to store data inputted and outputted from a host computer (i.e. external system, column 6, lines 2-8), a thermal sensor (80) to detect a temperature around the disk drive (column 6, lines 35-42), and a controller (i.e. processor, 72) to enable a write verify function when the temperature detected by the thermal sensor is below a threshold temperature (column 7, lines 38-48), detect for a presence of a recording error by reading and comparing data recorded in a data area sector of a disk with the data stored in the buffer and seek a reserved track (i.e. reserved spare space) of the disk and generate an instruction to record in a reserved sector of the disk when the recording error (i.e. hard error) is detected (column 8, lines 2-14).

Regarding claim 11, Jen et al disclose an apparatus for controlling a disk drive wherein the controller disables the write verify function if the temperature around the disk drive is greater than the threshold temperature (i.e. between the “low limit” and the “low threshold”) after which the controller records the data in a data area of the disk (column 7, lines 34-48).

Furthermore, Jen et al disclose a disk drive which operates in various writing modes including a “cold-write” and “normal-write” operations. The “cold-write” operation is executed when a detected temperature is below a “low threshold”, in this operation, data is written to a reserved sector of the disk. The “normal-write” is executed in a case when the temperature is above the “low threshold”. Therefore it is considered that the limitations are met by the reference.

Regarding claims 1, 3, and 5, method claims 1, 3, and 5 are drawn to the method of using the corresponding apparatus claimed in claims 10-12. Therefore method claims 1, 3, and 5 correspond to apparatus claims 10-12 and are rejected for the same reasons of anticipation as used above.

Furthermore, it is considered inherently disclosed by the reference that comparing data using a buffer separate from the disc is implemented since Jen discloses comparing read recorded data (i.e., data recorded) with “data to be saved”. It is considered that Jen’s “data to be saved” is data temporarily stored in memory and not data recorded on a disc surface. It is conventional in the art to provide a temporary memory (i.e., buffer) for storing such “data to be saved” prior to recording or for storing temporary data for processes such as comparing with previously recorded data (see Response to Arguments).

Regarding claim 9, Jen et al disclose a method of recording data with all the limitations of claim 1, wherein the threshold temperature (i.e. low limit) is based on when recording performance begins to drop, in consideration of a contraction rate of a pole tip, or a coercive force of the disk (column 3, lines 5-12).

Furthermore, the disclosure of Jen et al shows that a normal operation of a disk drive is executed effectively under specific temperatures. It is shown by Jen et al that temperatures outside a predetermined range affect the coercivity of the disk and therefore affect the performance of the writing operation of the disk drive (column 1, lines 29-36), it is therefore considered that Jen et al determines a threshold temperature based on recording performance and coercivity of the disk.

Regarding claim 16, method claim 16 is drawn to the method of using the corresponding apparatus claimed in claim 10. Therefore method claim 16 corresponds to apparatus claim 10 and is rejected for the same reasons of anticipation as used above.

Regarding claims 18-20, Jen et al disclose a medium (34) comprising computer readable code (i.e. computer programming code) controlling at least a computer (i.e. processor) to implement the method of claims 1, 5, and 16 discussed above (Fig. 7, column 6, lines 42-48).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jen et al U.S. Patent No. 6,405,277 in view of Kittilson et al U.S. Patent No. 6,078,452.

Regarding claim 2, the rejection applied to claim 2 in the previous Office action mailed December 14, 2004 is herein repeated for the same reasons (see Response to Arguments).

6. Claims 6, 8, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jen et al U.S. Patent No. 6,405,277 in view of Yasuda et al U.S. Patent No. 5,357,381.

Regarding claims 6, 8, 13, and 15 the rejections applied to the claims in the previous Office action mailed December 14, 2004 are herein repeated for the same reasons (see Response to Arguments).

7. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jen et al U.S. Patent No. 6,405,277 in view of Nguyen U.S. Patent No. 6,611,397.

Regarding claims 7 and 14 the rejections applied to the claims in the previous Office action mailed December 14, 2004 are herein repeated for the same reasons (see Response to Arguments).

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jen et al U.S. Patent No. 6,405,277 in view of Noh et al U.S. Patent Application Publication No. 2002/0154565.

Regarding claim 22, claim 22 has limitations similar to those treated in the above rejection of claim 1, and are met by the references as discussed above in view of Jen et al. Jen et al however fail to explicitly show a buffer comprising a first buffer memory recording data to be recorded to the disc and a second buffer memory temporarily storing data reproduced from the disc.

However, Noh et al disclose a method of recording and reproducing data using a memory architecture comprising individual buffers for recording and reproducing data for the purpose of providing high-speed data transfer (page 1, paragraph 7).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the method disclosed by Jen et al with the memory architecture disclosed by Noh et al in order to obtain a high-speed method of recording and reproducing data which furthermore would provide low electric power consumption.

Response to Arguments

9. Applicant's arguments filed February 1, 2006 have been fully considered but they are not persuasive. In the response to the previous Office action mailed on November 1, 2005, Applicant argues that Jen et al fails to disclose comparing data stored in a buffer with the read recorded data as recited in claim 1. Examiner however, respectfully disagrees since Jen et al disclose comparing data recorded on a disk medium with data to be stored. Conventionally, data to be stored on a medium passes through a temporary memory unit (i.e., buffer) before completing the writing operation. Jen et al shows an example of such temporary memory storage as buffer 74. Although Jen et al does not disclose that data to be stored is stored in buffer 74 during the comparing, it is considered inherent that data to be stored is temporarily held in a buffer. Furthermore, Microsoft Computer Dictionary Fifth Edition defines buffer as "A region of memory reserved for use as an intermediate repository in which data is temporarily held while waiting to be transferred between two locations or devices". For the reasons discussed above, it is considered that Jan et al discloses the limitations of the Applicant's invention as claimed in claims 1, 3, 5, 9-12, 16, and 18-20.

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10. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Jen et al is directed toward writing data on a medium and detecting defects and Yasuda et al is directed toward fast defect management. It is considered obvious that one with ordinary skill in the art would desire faster access of data recorded on a defective area in view of the disclosure of Yasuda et al.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniell L. Negrón whose telephone number is 571-272-7559. The examiner can normally be reached on Monday-Friday (8:30am-5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne R. Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DLN 
April 11, 2006


WAYNE YOUNG
SUPERVISORY PATENT EXAMINER